

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: Garland L. Segner et al. Attorney Docket: EV31008US
Serial No.: 10/632,145 Group Art Unit: 3736
Filed: July 31, 2003 Examiner: Jeffrey Gerben Hoekstra
For: GUIDE WIRE WITH STRANDED TIP

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal Brief is presented in support of the Notice of Appeal to the Board of Patent Appeals and Interferences, filed June 18, 2007, from the Final Rejection of claims 1, 2, 7 to 9, 12 to 14, 17 to 19, 24, 25, 30, 33 to 35, 38 to 40, and 48 of the above-identified application, as set forth in the Final Office Action mailed March 16, 2007. Please charge Deposit Account No. 16-2312 in the amount of \$500.00 to cover the fee for filing an appeal brief. Appellants respectfully request reconsideration and reversal of the Examiner's rejection of the claims.

Certificate of Electronic Transmission (37 C.F.R. § 1.8)

I hereby certify that this paper is being transmitted to the U.S. Patent and Trademark Office electronic filing system on the date indicated below.

Date:

August 20, 2007

Signature:

Patrick J. O'Connell

Name: Patrick J. O'Connell

As required by 37 C.F.R. § 41.37, this Brief contains the following items under the headings and in the order suggested therein.

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(1) REAL PARTY IN INTEREST

The real party in interest of the above-captioned patent application is the assignee, ev3 Inc.

(2) RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellants or Appellants' representative that will have a bearing on the Board's decision in the present appeal.

(3) STATUS OF CLAIMS

Claims 15, 20, 21, 36, 41, and 42 are cancelled. Claims 1 to 14, 16 to 19, 22 to 35, 37 to 40, and 43 to 49 are pending in this application. The Examiner withdrew from consideration claims 3 to 6, 10, 11, 16, 22, 23, 26 to 29, 31, 32, 37, 43 to 47, and 49. Claims 1, 2, 7 to 9, 12 to 14, 17 to 19, 24, 25, 30, 33 to 35, 38 to 40, and 48 are rejected and are the subject of this appeal.

(4) STATUS OF AMENDMENTS

No amendments have been made subsequent to the Final Office Action dated March 16, 2007.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

The invention as recited in claim 1 relates to a guide wire 10 (see FIG. 1A) comprising an elongate, flexible core 14 (FIG. 1A; page 8, lines 17 to 19) having a proximal region, a proximal end, a distal region, and a distal end, and the distal region having a tapered portion 12 (FIG. 1A; page 8, lines 19 to 21; page 3, lines 26 to 28); a single coil comprising 3 to 24 wire strands 15 (FIG. 1A; page 8, lines 24 and 25; page 6, lines 17 to 20), each of the 3 to 24 wire strands 15 being formed in a single helix and wrapped helically parallel to one another to thereby form the single coil (page 8, lines 25 to 27; page 3, line 28 to page 4, line 1), the single coil having a longitudinal central axis and an interior, and at least a portion of the tapered distal region of the core 14 being disposed within the interior of the single coil (FIG. 1A; page 3, line 29 to page 4, line 1); a polymer tie layer 16 (FIG. 1A; page 9, lines 13 to 15; page 4, lines 1 and 2) disposed on at least a portion of the wire strands 15 (page 9, lines 17 to 20); and a lubricious polymer layer 18 (FIG. 1A; page 9, lines 23 to 28) disposed on the polymer tie layer 16 (page 4, line 2). The angle between the wire strands 15 and the longitudinal central axis is from 10 to 45 degrees (page 15, lines 10 and 11).

The invention as recited in claim 24 relates to a guide wire 10 comprising an elongate, flexible core 14 (FIG. 1A; page 8, lines 17 to 19) having a proximal region, a proximal end, a distal region, and a distal end, and the distal region having a tapered portion 12 (FIG. 1A; page 8, lines 19 to 21; page 3, lines 26 to 28); a single coil comprising 3 to 24 wire strands 15 (FIG. 1A; page 8, lines 24 and 25; page 6, lines 17 to 20), each of the 3 to 24 wire strands 15 being formed in a single helix and wrapped helically parallel to one another to thereby form the single coil (page 8, lines 25 to 27; page 3, line 28 to page 4, line 1), the single coil

having a longitudinal central axis and an interior, and at least a portion of the tapered distal region of the core 14 being disposed within the interior of the single coil (FIG. 1A; page 3, line 29 to page 4, line 1); and a polymer tie layer 16 (FIG. 1A; page 9, lines 13 to 15; page 4, lines 1 and 2) disposed on at least a portion of the wire strands 15 (page 9, lines 17 to 20). The polymer tie layer 16 provides the only form of attachment between the wire strands 15 and the core 14 (page 9, lines 13 to 22; page 8, line 27 to page 9, line 2). The angle between the wire strands 15 and the longitudinal central axis is from 10 to 45 degrees (page 15, lines 10 and 11).

The invention as recited in claim 48 relates to a guide wire 10 comprising an elongate, flexible core 14 (FIG. 1A; page 8, lines 17 to 19) having a proximal region, a proximal end, a distal region, and a distal end (FIG. 1A; page 3, lines 26 and 27); a single coil comprising 3 to 24 wire strands 15 (FIG. 1A; page 8, lines 24 and 25; page 6, lines 17 to 20), each of the 3 to 24 wire strands 15 being formed in a single helix and wrapped helically parallel to one another to thereby form the single coil (page 8, lines 25 to 27; page 3, line 28 to page 4, line 1), the single coil having a longitudinal central axis and an interior, and the single coil being disposed distal to the distal end of the elongate, flexible core 14 (FIG. 3C, page 12, line 23); and a polymer tie layer 16 (FIG. 1A; page 9, lines 13 to 15; page 4, lines 1 and 2) disposed on at least a portion of the wire strands 15 and at least a portion of the elongate, flexible core 14 (page 9, lines 17 to 22). The angle between the wire strands 15 and the longitudinal central axis is from 10 to 45 degrees (page 15, lines 10 and 11).

This summary does not provide an exhaustive or exclusive view of the present subject matter, and Appellants refer to the appended claims and their legal equivalents for a description of the invention.

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 24, 30, 33 to 35, 38 to 40, and 48 are rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,019,736 to Avellanet et al. ("Avellanet").

Claims 1, 2, 7 to 9, 12 to 14, 17 to 19, and 25 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Avellanet and U.S. Patent No. 5,749,837 to Palermo et al. ("Palermo").

(7) ARGUMENT

A. Rejection Under 35 U.S.C. § 102(b) as Anticipated by Avellanet

The claimed guide wires comprise a core and a single coil and other components. The single coil comprises 3 to 24 wire strands and these wire strands of the coil form an angle between the wire strands and the longitudinal central axis of the coil of from 10 to 45 degrees. Claims 1 and 24 recite that at least a portion of the tapered distal region of the core is disposed within the interior of the single coil, and claim 48 recites that the single coil is disposed distal to the distal end of the core. Avellanet does not teach or suggest the claimed range for the angle of from 10 to 45 degrees.

Figure 11 of Avellanet shows an angle between the coil 116 and the core 100 that falls outside of this range. No angle falling within the claimed range is disclosed in Avellanet. Appellants do not understand how the Examiner can construe Avellanet to teach or suggest the claimed range.

In the May 23, 2007 Advisory Action, the Examiner states that:

Avellanet discloses in Figures 1, 4, 8, and 9 an angle between a multifilament wire and a longitudinal central [axis] being approximately 45 degrees, similar to . . . Applicant's Figure 1A.

However, Figures 1, 4, 8, and 9 relate solely to the core of the guidewire of Avellanet. In the cores shown in these figures, a wire braid has been drawn through a die to form a multifilament guidewire core. See Figure 1 and the description of Figure 1 at column 4, lines 26 to 28. Figures 10 and 11 of Avellanet and Appellants' Figure 1A show guide wires having a core and a coil. Since Figures 1, 4, 8, and 9 relate only to cores, they are not relevant to the claimed limitation of 10 to 45 degrees regarding the coil.

In the May 23, 2007 Advisory Action, the Examiner states that:

Moreover, Avellanet discloses shortening and/or lengthening the lay length or pitch of the wire, as best seen in Figure 1, to adjust the [flexibility] of the guidewire for traversing tortuous vasculature (column 5 lines 1-36). By configuring the lay length, the helically wrapped wire strands as disclosed by Avellanet is capable of having an angle between the wire strands and the longitudinal central axis of 10 to 45 degrees.

However, again Figure 1 and the accompanying description at column 5, lines 1 to 36, relates only to the core and are not relevant to the claimed limitation of 10 to 45 degrees regarding the coil.

Because Avellanet does not teach or suggest the claimed invention, Appellants respectfully request that the Examiner withdraw this rejection of the claims.

B. Rejection Under 35 U.S.C. § 103(a) as Unpatentable Over the Combination of Avellanet and Palermo

As discussed above, the claimed guide wires comprise a core and a single coil and other components. The single coil comprises 3 to 24 wire strands and these wire strands of the coil form an angle between the wire strands and the longitudinal central axis of the coil of from 10 to 45 degrees.

As discussed above, Avellanet does not teach or suggest the claimed range for the angle of from 10 to 45 degrees. Palermo does not remedy this deficiency of Avellanet. Because the combination of Avellanet and Palermo does not suggest the claimed invention, Appellants respectfully request that the Examiner withdraw this rejection of the claims.

(8) SUMMARY

For the reasons discussed above, claims 24, 30, 33 to 35, 38 to 40, and 48 are not properly rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,019,736 to Avellanet et al., and claims 1, 2, 7 to 9, 12 to 14, 17 to 19, and 25 are not properly rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Avellanet and U.S. Patent No. 5,749,837 to Palermo et al.

Appellants respectfully submit that the art cited does not render the claims anticipated or obvious and that the claims are patentable over the cited art. Reversal of the rejection and allowance of the appealed claims are respectfully requested.

If any additional fees are due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 16-2312. If a fee is required for

an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our deposit account.

Respectfully submitted,

Date: August 20, 2007

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CLAIMS APPENDIX

1. (Previously presented) A guide wire comprising:
an elongate, flexible core having a proximal region, a proximal end, a distal region, and a distal end, and the distal region having a tapered portion;
a single coil comprising 3 to 24 wire strands, each of the 3 to 24 wire strands being formed in a single helix and wrapped helically parallel to one another to thereby form the single coil, the single coil having a longitudinal central axis and an interior, and at least a portion of the tapered distal region of the core being disposed within the interior of the single coil;
a polymer tie layer disposed on at least a portion of the wire strands; and
a lubricious polymer layer disposed on the polymer tie layer, and
wherein the angle between the wire strands and the longitudinal central axis is from 10 to 45 degrees.
2. (Original) A guide wire of claim 1, wherein the polymer tie layer is disposed on the entire distal end of the guide wire.
7. (Previously presented) A guide wire of claim 1, wherein the polymer tie layer provides the only form of attachment between the wire strands and the core.
8. (Previously presented) A guide wire of claim 1, wherein the wire strands are attached to the core by one or more solders, welds, swaging tubes, or adhesives.
9. (Original) A guide wire of claim 1, wherein the guide wire has a distal end and the core extends to the distal end of the guide wire.

12. (Original) A guide wire of claim 1, wherein the length of the guide wire is from 30 to 350 cm.

13. (Original) A guide wire of claim 1, wherein the length of the guide wire is from 150 to 320 cm.

14. (Previously presented) A guide wire of claim 1, wherein the guide wire has an outer diameter of from 0.013 to 0.097 cm.

17. (Previously presented) A guide wire of claim 1, wherein the wire strands have lengths of from 1 to 80 cm.

18. (Previously presented) A guide wire of claim 1, wherein the wire strands have outer diameters of from 0.0025 to 0.025 cm.

19. (Original) A guide wire of claim 1, wherein the tapered distal region of the core has a length of from 5 to 80 cm.

24. (Previously presented) A guide wire comprising:
an elongate, flexible core having a proximal region, a proximal end, a distal region, and a distal end, and the distal region having a tapered portion;
a single coil comprising 3 to 24 wire strands, each of the 3 to 24 wire strands being formed in a single helix and wrapped helically parallel to one another to thereby form the single coil, the single coil having a longitudinal central axis and an interior, and at least a portion of the tapered distal region of the core being disposed within the interior of the single coil; and

a polymer tie layer disposed on at least a portion of the wire strands,
wherein the polymer tie layer provides the only form of attachment between
the wire strands and the core, and
wherein the angle between the wire strands and the longitudinal central axis
is from 10 to 45 degrees.

25. (Original) A guide wire of claim 24, wherein the polymer tie layer
is disposed on the entire distal end of the guide wire.

30. (Original) A guide wire of claim 24, wherein the guide wire has a
distal end and the core extends to the distal end of the guide wire.

33. (Original) A guide wire of claim 24, wherein the length of the guide
wire is from 30 to 350 cm.

34. (Original) A guide wire of claim 24, wherein the length of the guide
wire is from 150 to 320 cm.

35. (Previously presented) A guide wire of claim 24, wherein the guide
wire has an outer diameter of from 0.013 to 0.097 cm.

38. (Previously presented) A guide wire of claim 24, wherein the wire
strands have lengths of from 1 to 80 cm.

39. (Previously presented) A guide wire of claim 24, wherein the wire
strands have outer diameters of from 0.0025 to 0.025 cm.

40. (Original) A guide wire of claim 24, wherein the tapered distal region of the core has a length of from 5 to 80 cm.

48. (Previously presented) A guide wire comprising:
an elongate, flexible core having a proximal region, a proximal end, a distal region, and a distal end;

a single coil comprising 3 to 24 wire strands, each of the 3 to 24 wire strands being formed in a single helix and wrapped helically parallel to one another to thereby form the single coil, the single coil having a longitudinal central axis and an interior, and the single coil being disposed distal to the distal end of the elongate, flexible core; and

a polymer tie layer disposed on at least a portion of the wire strands and at least a portion of the elongate, flexible core, and

wherein the angle between the wire strands and the longitudinal central axis is from 10 to 45 degrees.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.